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RULEMAKING ESTABLISHING ELECTRIC WEATHERIZATION STANDARDS	§ § §	**PUBLIC UTILITY COMMISSION OF TEXAS**

TEXAS-NEW MEXICO POWER COMPANY'S RESPONSE TO QUESTION ON WEATHERIZATION OF TRANSMISSION FACILITIES

Texas-New Mexico Power Company ("TNMP") submits the following response to the request for comments on the question addressing weatherization standards for transmission facilities issued by the Staff of the Public Utility Commission of Texas (Commission Staff) on June 9, 2021. TNMP appreciates the opportunity to provide comments on weatherization standards for investor-owned transmission and distribution utilities (TDUs) and looks forward to working with the Commission to address the critical issue of emergency preparedness. As a TDU that owns no generation resources, TNMP will address the following question regarding weatherization of transmission facilities:

> **To fulfill the requirements of Texas Utilities Code § 38.075(a), under what weather emergency conditions should the Commission require an electric cooperative, municipally owned utility, or transmission and distribution utility providing transmission service in the ERCOT power region to be able to operate its transmission facilities? At a minimum, please address standards for temperature, icing, wind, flooding, and drought conditions. For each, please address whether the standard should vary by region or by type of generation facility. Please provide any relevant support for your recommendations, including existing or proposed standards in other jurisdictions, or related studies.**

I. EXECUTIVE SUMMARY

TNMP currently follows existing regulatory requirements and industry best practices with regard to weatherization standards, as required by the Commission's rules. These existing standards include but are not limited to the standards imposed by the National Electric Safety Code ("NESC"), the American National Standards Institute (ANSI), and the North American Electric

Reliability Corporation ("NERC"). These requirements form the foundation of TNMP's efforts to appropriately address weatherization of its transmission infrastructure. Due to the non-contiguous nature of TNMP's service area, and the diverse weather conditions across Texas, TNMP's facility design criteria varies geographically as necessary and permitted by the applicable code or standard. Consequently, accounting for the varied environmental conditions present in different regions of the state is critical in facility design and should be taken into account when adopting standards and rules that go beyond the above mentioned regulatory criteria already in place.

Response:

Pursuant to 16 Texas Administrative Code ("TAC") § 25.101(d), TNMP constructs, maintains, and operates its new and existing transmission facilities per the standards imposed by the NESC, the ANSI, and all other codes, regulations, and generally accepted industry standards. TNMP follows NESC requirements with regard to design standards for transmission lines and substations and their window of safe operation. As required by NERC FAC-008-3, the strength and clearances of poles and wires are designed according to TNMP's Facility Ratings Methodology (FRM). Electrical conductor ratings are governed by the applicable Institute of Electrical and Electronics Engineers (IEEE) standard for each apparatus or equipment type. NESC Rule 250 specifies three weather loading requirements in which the one that has the greatest effect governs the strength requirements and design of electric utility poles. TNMP's FRM prescribes the weather conditions associated with maximum conductor ratings. Additionally, each IEEE standard provides for "usual service conditions" that cover the range of temperatures, elevations, and wind speeds that TNMP's apparatus and equipment can withstand across its non-contiguous service territory. Correspondingly, TNMP utilizes manufacturers component ratings to ensure compliance with the foregoing design and operation standards.

In addressing the question posed by Staff regarding particular weather conditions, TNMP applies ratings based on IEEE Standard 738 to ensure appropriate operational temperatures for its transmission facilities. Similarly, TNMP also incorporates the requirements of NESC Rule 250 to address wind and ice impacts in the design of transmission facilities. For instance, Attachment A is a listing of the weather cases used for TNMP's transmission wire lines with criteria and code specific wind and terrain parameters for height adjustment and gust response factors. By applying these specific standards, TNMP can ensure safe and reliable operation of its transmission system in a wide range of weather conditions including extreme wind, high and low temperatures, and icing conditions.

With regard to flooding conditions, TNMP designs its facilities to an elevation 12 inches above the localized 100-year flood elevation, or higher if site conditions require, per our site preparation design and construction specification and has done so since 2009. TNMP does not have a defined transmission facility criterion for "drought conditions." However, TNMP does employ other initiatives that address certain operational risks that often accompany drought conditions. Specifically, TNMP has employed and maintains a comprehensive vegetation management plan to address the potential for excessive plant growth that could result in wildfires if drought conditions are present. Additionally, in industrial or designated high contamination prone areas, TNMP monitors localized ambient humidity, rainfall, and temperature to trigger preventive maintenance on its facilities.

The standards applied to TNMP's design and operation of transmission facilities account for the variances in weather and environment experienced by TNMP in its varied service territories. These same standards and criteria apply regardless of connection to a generator and regardless of the generator type. Consequently, facility design criteria varies geographically as

necessary and permitted by the applicable code or standard. Since, TNMP's service territory accommodates conditions in North, Central, and West Texas, as well as along the Texas Coastline, accounting for the varied environmental conditions, particularly wind loading, is critical in facility design. A state as large as Texas experiences variations in regional climate and weather that necessitates weatherization standards that take those variations into account.

The codes and standards TNMP applies to design and operate its transmission facilities in the above mentioned weather conditions include, but not are limited to, the following:

- NESC;
- ANSI/IEEE Standard 738;
- The American Society of Civil Engineers (ASCE) E 48-19 Design of steel pole transmission structures;
- ASCE 113 Substation Structure Design Guide;
- The Aluminum Design Manual;
- The American Concrete Institute 318 Building Code Requirements for Structural Concrete;
- ASCE 7 Minimum Design Loads for Buildings and Other Structures;
- The American Institute of Steel Construction Manual;
- IEEE 693 Recommended Practice for Seismic Design of Substations;
- IEEE 605 Guide for Design of Substation Rigid Bus Structures; and
- IEEE C37.04

Given the breadth of these standards and the complexity of their technical application, TNMP believes further discussion would assist the development of the emergency weatherization standards being contemplated as part of this rulemaking. Due to the sensitive nature of some of the data TNMP believes would need to be provided in order for those discussions to be as beneficial as possible, TNMP is of the opinion that a separate, "table-top" style discussion with Staff of TNMP's current transmission design and maintenance policies, applicable standards, and these comments, would be the most efficient way to proceed.

II. CONCLUSION

TNMP appreciates the opportunity to respond to Commission Staff's request for comments in this matter and is available to discuss or provide additional information deemed to be helpful during the course of this proceeding.

Respectfully submitted,

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ATTACHMENT A

Weather Cases

See Criteria/Code Specific Wind and Terrain Parameters for more information on height adjustments and gust response factors

	Description	Air Density Factor (Q) (psf/mph^2)	Wind Velocity (mph)	Wind Pressure (psf)	Wire Ice Thickness (in)	Wire Ice Density (lbs/ft^3)	Wire Ice Load (lbs/ft)	Wire Temp. (deg F)	Ambient Temp. (deg F)	Weather Load Factor	NESC Constant (lbs/ft)	Wire Wind Height Adjust Model	Wire Gust Response Factor
1	NESC 250B Heavy	0.00256	39.5285	4	0.5	57				1	0.3	None	1
2	NESC 250C	0.00256	94.7859	23				60.0	60.0	1		NESC 2017	NESC 2017
3	NESC 250D	0.00256	40	4.096	0.75	57		15.0	15.0	1		None	1
4	32°F/0.5"ice	0.00256			0.5	57		32.0	32.0	1		None	1
5	32°F W/O ice	0.00256						32.0	32.0	1		None	1
6	NESC Blowout 6PSF	0.00256	48.4123	6				60.0	60.0	1		None	1
7	No Wind (Swing 1)	0.00256						60.0	60.0	1		None	1
8	Medium Wind (Swing 2)	0.00256	48.4123	6				60.0	60.0	1		None	1
9	Medium Wind (Swing 3)	0.00256	48.4123	6				32.0	32.0	1		None	1
10	High Wind (Swing 4)	0.00256	79.0569	16				60.0	60.0	1		None	1
11	Deflection	0.00256	27.9508	2				60.0	60.0	1		None	1
12	Construction	0.00256	27.9508	2						1		None	1
13	Galloping (Swing)	0.00256	27.9508	2	0.5	57		32.0	32.0	1		None	1
14	Galloping (Sag)	0.00256			0.5	57		32.0	32.0	1		None	1
15	Cold 20 (Uplift)	0.00256						20.0	20.0	1		None	1
16	39 psf Wind on Pole	0.00256	123.428	39				60.0	60.0	1		None	1
17	0°F	0.00256								1		None	1
18	60°F	0.00256						60.0	60.0	1		None	1
19	120°F	0.00256						120.0	120.0	1		None	1
20	167°F	0.00256						167.0	167.0	1		None	1
21	212°F	0.00256						212.0	212.0	1		None	1
22	392°F	0.00256						392.0	392.0	1		None	1
23	482°F	0.00256						482.0	482.0	1		None	1